TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

Comparative chemical resistance of fibers.

E. I. du Pont de Nemours and Co., Inc. Wilmington, March 1956. 26 p. Technical Information Bulletin X-48.

This bulletin gives the results of a study of the chemical resistance of acetate rayon, Dacron, nylon, Orlon, cotton, silk and wool. A shortened version of this bulletin is published in *Textile World 106:* 112-124 (March, 1956).

Extensometric and elastic properties of textile fibers.

B. Farrow. *J. Textile Inst. 47:* T58-T101 (February, 1956).

Load-extension and elastic recovery results are given for some sixty fiber samples tested under three conditions—air dry, immersed in cold water, and immersed in hot water. Fifteen chemical classes of man-made fibers are represented, with some natural fibers for comparison. The effect of a pretreatment in hot water on the tensile behavior of the fibers in air is also examined. Tables, graphs. 6 references.

The mechanical properties of textile fibres.

R. Meredith. Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y., 1956. 333 p. $8.75.

The work is divided into three parts dealing with cellulose, protein and synthetic fibers with an introductory chapter on fibers as chain molecular systems and the mechanism of deformation of fibers in general.

NATURAL FIBERS A 1

The asbestos industry.

O. Bowles, Wash., U. S. Bureau of Mines, 1955. 122 p. U. S. Bureau of Mines Bulletin 552. Available from Superintendent of Documents, Washington 25, D. C. $1.00.

Comprehensive report on the occurrence, technique and equipment of mining and milling, new applications, economic problems, international trade, reserves, manufacture of asbestos products and various other aspects.

Cotton and cottonseed: acreage, yield, production, disposition, price, value by states, 1866-1952.

U. S. Agricultural Marketing Service, Wash., 1955. 64 p. Statistical Bulletin No. 164. Available from the Superintendent of Documents, Washington 25, D. C. 40¢.

The cotton industry: today and tomorrow.

M. Ludwig, editor. International Federation of Cotton and Allied Textile Industries, 567 Royal Exchange, Manchester 2, England, 1955. 288 p. $2.94.

Official report on the Jubilee International Cotton Congress held at Buxton, England, 13th-20th May, 1954. Papers on cotton growing, spinning, weaving, finishing and blending with man-made fibers are included.

Summary of fiber and spinning test results for some varieties of cotton grown by selected cotton improvement groups, crop of 1955.

U. S. Agricultural Marketing Service, Wash., 1956. 51 p. Agriculture Information Bulletin No. 152. Available from the Superintendent of Documents, Washington 25, D. C. 30¢.

Survey of harsh short staple cotton.

International Cotton Advisory Committee, Wash., 1955. 17 p. Doc. 11 XIV. South Agriculture Building, Washington 25, D. C.

The unusual resiliency of harsh Asiatic cotton makes it particularly desirable for blanket manufacture and for other specialized uses, such as wadding for milk filters and clothing shoulder pads, batting, felt for mattresses, upholstery stuffing, and coarse yarns for carpets, rugs and heavy fabrics. Since there is a shortage of this material, a survey was made to determine export availability and potentiality as well as probable maximum demand.

Cotton growing problems.

B. G. Christidis and G. J. Harrison. McGraw-Hill Book Co., 330 W. 42nd Street, New York 36, N. Y., 1955. 633 p. $9.75.

Problems of breeding, fertilization, crop rotation, seed treatment, planting, cultivation, harvesting and cotton diseases are covered and an extensive bibliography included for each section of the text.

Report on new uses and efforts to promote cotton consumption.

International Cotton Advisory Committee, Wash., 1955. 99 p. Doc. 14 XIV. South Agriculture Building, Washington 25, D. C.

A world-wide survey on new and improved products of and uses for cotton indicates that recent advances in the utilization of cotton have been most evident in the apparel field, then in household uses and less so in industrial uses. Of particular significance have been the new finishes which give promise of offsetting some of the advantages claimed for synthetics.

Scutching machine for fiber flax.

L. M. Klein and J. E. Harmond. Wash., U. S. Department of Agriculture, 1955. 16 p. Circular No. 975. Available from Superintendent of Documents, Washington 25, D. C. 15¢.

A new scutcher, used with new auxiliary equipment, improves the scutching operation's efficiency and reduces its labor requirement by at least four men. Photographs. Diagrams.

Certain physico-chemical properties of coarse fibers allied to jute.

R. R. Mukherjee and M. Ramaswamy (Indian Jute Mills Assoc. Research Inst.). *J. Sci and Ind. Research (India) 15:* 37-42 (January, 1956).

A study of Pakistan jute, *daisee* jute, mestha, green hemp and aloe fibers was made.

The fluctuating moisture content of wool.

F. B. Wilkins. *Wool 1, No. 5* (1952-53). Through *Textile J. Australia 29:* 1106-1107, 1151-1152 (November 20, 1954).

Data are given on the effect of humidity on moisture content and yield of wool.

Wool regain in the Australian climate.

W. R. Lang. *Textile J. Australia 30:* 282-284 (May 20, 1955).

Dimensional changes and related phenomena in wool fibers under stress.

E. C. Banky and S. B. Slen (Canada Department of Agriculture). *Textile Research J. 26:* 204-210 (March, 1956).

The type and magnitude of dimensional changes occurring in wool fibers under stress were investigated by means of transverse and longitudinal measurements. The over-all rate of decrease in the fiber diameter as related to the rate of extension indicated a constant volume distortion beyond the Hookean extension. However, slight deviations at approximately 5 and 27% extensions suggested the possibility of drastic structural changes at these levels. Data on the length contraction owing to crimp and observations at microscopic level regarding the absence of mechanical damages to the structural elements of wool under stress also are presented. 15 references.

New aspects of the structure of wool.

A. F. Barker. (Letter to the editor). *Textile J. Australia 29:* 586-588 (July 20, 1954).

Criticism of paper by E. H. Mercer. See *TTD 11:* 186 (May, 1954).

The relation between wool felting and single fiber properties.

A.K. van der Vegt (Central Laboratorium T.N.O.). *Ann. Sci. Textiles Belges No. 3:* 223-231 (March, 1956).

The relation between the rate of felting of wool yarn as a function of the applied forces on the one hand, and the frictional and elastic properties of the single fibers on the other hand, was investigated. One series of experiments was performed on a number of yarns in which the frictional properties of the fibers were modified to various degrees by chemical treatments; in another series the fiber stiffness was systematically varied by applying aqueous solutions. The results of the experiments show that when the force affecting the fibers is smaller than the with-scale frictional resistance no shrinkage occurs; when it attains a higher value, shrinkage of the yarn per time affected is proportional to the applied force minus the with-scale kinetic friction and inversely proportional to the Young's modulus of the fibers; when the force exceeds the anti-scale friction, as well, the shrinkage becomes more or less independent of the force.

The shrinking and felting properties of wools.

A. F. Barker. *Textile J. Australia 29:* 1482-1485, 1489 (February 21, 1955).

A brief discussion of the correlation of wool fiber properties with fabric shrinkage. Photographs.

The wool fiber.

Ciba Rev. No. 113: 4104-4138 (February, 1956).

Sheep's wool and other wools, by M. Kehren, p. 4104-4107; *Fine structure in wool, by* M. Kehren, 4109-4111; *Chemical and physical properties of wool,* by M. Kehren, p. 4113-4116; *Worsted yarn and woolen yarn,* by M. Kehren, p. 4118-4119; *The surface structure of sheep's wool and other animal hairs,* by R. Lassé, p. 4120-4126; *Finishing of wool,* by M. Kehren, p. 4128-4135; *Wool damage—its causes, determination, and prevention* by M. Kehren, p. 4136-4138. 32 references.

Wool grease: the economics of recovery and utilization in the United States.

R. S. Raymond and S. L. Mandell. Wash., U. S. Agricultural Marketing Service, 1955. 164 p. Marketing Research Report No. 89. Available from Superintendent of Documents, Washington 25, D. C. $1.00.

Comprehensive study dealing with the economic aspects of the production, distribution and consumption of wool grease. 121 references.

MAN-MADE FIBERS A 2

Fiber progress review: summary of developments in 1955.

J. A. Somers. *Man-Made Textiles 32:* 55-57 (March, 1956).

The newest man-made fiber: Eastman's acrylic Verel.

Eastman Chemical Products, Inc. *Am. Textile Reptr. 70:* 13, 42-43 (March 22, 1956).

Verel has low pilling propensity, fire resistance, good blending and bulking properties, and controlled shrinkage.

Better nylon in the making?

Chem. Week 78: 54-56 (March 31, 1956).

A discussion of a new du Pont patent (BP 737 939) which discloses a new process permitting the production of polyoxamides that can be spun into textile fibers having better textile properties than nylon and potentially cheaper.

Heat deterioration of nylon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, February, 1955. 3 p. Technical Information Bulletin N-55.

Rilsan-polyamide 11: a newcomer in the field of synthetic fibers.

R. Aelion. *Fibres 17:* 79-82 (March, 1956).

The chemical synthesis, polymerisation and spinning of Rilsan and its general and textile properties are described.

Melt-spinning cellulose acetate.

Man-Made Textiles 32: 50-51, 54 (March, 1956).

A new method and apparatus for melt-spinning which has proved suitable for spinning acetate and other cellulose esters and polymer blends is described.

Fiber properties of modified aromatic polyesters. Part 1.

W. Griehl and R. Hoffmeister. *Faserforsch. u. Textiltech. 6, No. 11:* 504-508 (1955); *in German.* Through *BCIRA 36:* 86 (1956).

The possibilities of improving the textile properties of polyethylene terephthalate (a) by systematic alteration of the molecular symmetry and, consequently, reduction of the crystallinity, and (b) by decreasing the number of *p*-phenylene linkages in the macromolecule (to reduce the brittleness of the fiber) are discussed, with reference to the preparation of mixed polyesters, polyester mixtures and block polymers.

YARN PRODUCTION B

Spun-dyed viscose rayon staple. Part 3. Processing Fibro-Duracol on the worsted system.

Textile Merc. 134: 350-351, 353 (March 2, 1956).

Notes from Courtaulds' *Fibro-Duracol* manual.

The spinning of acetate/wool blend yarns on a modified cotton system.

British Celanese Ltd. *Man-Made Textiles 32:* 44-46 (March, 1956).

On the basis of trials carried out by British Celanese Staple Fiber Development Department it is concluded that Celafibre/wool blended yarns of a quality comparable with conventional worsted blends can be spun satisfactorily on a modified cotton system.

Trouble-shooting in the spinning mill.

G. Dakin. (Shirley Inst.) *Textile Wkly. 56:* 515-516, 518 (February 24, 1956).

Count variation, dust, neps, regularity and sliver to yarn spinning are mentioned.

A critical survey of the processing of natural wools, man-made fibers and mixtures of the same, in worsted spinning.

H. Weingartner. *Textil-Praxis 9:* 156-158 (1954); *in German.* Translation in *Textile J Australia 29:* 1172, 1174, 1260 (December 20, 1954).

See *TTD 11:* 521 (1954).

Planning to spin mohair? Here are some pointers for you.

C. F. Millward. *Textile Ind. 102:* 142-144 (April, 1956).

In running mohair, several points in preparation demand close attention: stock selection to spin down to required yarn size, cutting, dusting, scouring, and the nature of the blending stock.

Practical drawing and spinning on the continental system.

H. Needham. National Trade Press Ltd., Tower House, Southampton Street, Strand, London, W.C.2, England, 1955. 134 p. $1.75.

The study of the Continental system of worsted yarn production is largely devoted to processing techniques and the elimination of yarn faults.

How to determine spinners' and doffers' work loads.

M. Chagro. *Textile Ind. 120:* 136-138 (April, 1956).

Side spinning with major cleaning duties eliminated improves quality and reduces costs. Piecerate doffing by the box or doff, with optional incentives, increases production.

The properties and uses of Courlene.

J. Boyd (Courtaulds Ltd). *Fibres 17:* 73-77 (March, 1956).

The author discusses Courtaulds' Courlene polyethylene yarn, describing its properties, processing techniques and applications in detail.

Preparation and processing of textile waste.

H. Fenne. *Melliand Textilber. 36, No. 11:* 1089-1094 (1955); *in German.* Through *BCIRA 36:* 88 (1956).

Modern machinery for processing cotton waste material is reviewed, with reference to the Spizuklo machine (replacing the usual willow), the Cotonia cleaning machine, a two-roller wet rag tearing machine, a staple-cutting machine, and a waste picker. Illustrations of these machines are given.

Innovations in the construction of cotton spinning machinery.

VEB Spinnereimaschinenbau. *Textil-u. Faserstofftech. 5, No. 11:* 608-611 (1955); *in German.* Through *BCIRA 36:* 89 (1956).

Reference is made to, and illustrations are given of, the new mobile pressure lever for ring-spinning machines, improved pressure rollers, rubber-coated apron-guiding rollers, an improved roller coupling for the fluted bottom rollers, a new mobile pressure lever for roving frames, a new weighting device for draw-frames, and a new chain drive for card motors.

OPENING, PICKING, FIBER PREPARATION B 1

Processing low percentage blends of nylon staple with cotton: blending, picking and carding of 10 to 30% blends of nylon staple with cotton.

E. I. du Pont de Nemours and Co., Inc. Wilmington, February, 1956. 3 p. Technical Information Bulletin N-59.

CARDING AND COMBING B 2

Removal of card waste by suction.

K. Muller. *Rayonne et Fibres Synthet. 11, No. 10:* 1673-1676 (1955); *in French.* Through *BCIRA 36:* 88 (1956).

A sketch is given of an installation of the Societe TEMAFA at Bensberg. The pipe-lines can be placed either above or below the machine; they are constructed from steel tubes (each 5-6 m long). A general description is given of the mechanism of such an installation.

Wool web variations controlled automatically.

Control Eng. 3: 105-107 (February, 1956).

Closed-loop control of the wool carding process improves the final product and reduces spoilage of material. A photocell circuit, self-stabilizing light source, and a variable-speed drive control roller speed in the Autocount, developed by the Wool Industries Research Association.

Inaccurate working of feed rollers, a source of trouble on flat cards that is often disregarded.

A. Roosen. *Textile-Praxis 9:* 1022-1023 (1954); *in German.* Translation in *Textile J. Australia 29:* 1038 (November 21, 1955).

A simple and easy method is recommended for checking feeding rollers.

Care of card clothing.

Saco-Lowell Bull. 28: 40-48 (January, 1956).

A program for the care of card clothing is outlined and directions are given for cutting a perfect taper.

Upgrading of cotton by means of combing.

J. R. Puri. *Textile J. Australia 30:* 462-463 (June 20, 1955).

Brief article comparing production and cost data using three passages of four line draw frames, followed by a lap former instead of using sliver lap and ribbon lap machines.

Noil control: a primary essential for quality combing.

Saco-Lowell Bull. 28: 16-20 (January, 1956).

Features of the Saco-Lowell model No. 56 comber are discussed. High-speed photographs depicting a complete combing cycle are included. Tables. Graphs.

DRAWING AND ROVING B 3

Mill test procedures. Part 3. Tests for drawing and roving.

N. L. Enrick. *Modern Textiles Mag. 37:* 34, 37, 40, 93 (March, 1956).

Presents purpose, methods of sampling and testing, testing frequency, and evaluation of test results for the following types of processing tests: drawing frame condition, roving tensions and twists, and roving and spinning horizontal traverse motion. Illustrative forms, diagrams and charts from actual mill applications are included.

Cop formation by the carded wool self-actor and possible faults.

P. J. M. van Gorp. *Tex 14, No. 10:* 1393-1400; *No. 11:* 1537-1544 (1955); *in Dutch.* Through *BCIRA 36:* 52 (1956).

Short operation processing of worsted yarns.

A. Poncelet (Prince-Smith & Stells Ltd.). *Textile J. Australia 29:* 1416, 1418, 1420, 1424-1426 (February 21, 1955).

Lecture on the English, Continental and American shortened drawing systems with emphasis on the Raper system. See also article by Messrs. Feather and Caley (Prince-Smith & Stells Ltd.) in *Textile J. Australia 29:* 334-336 (May 20, 1954).

Suppression of third passage of drawing.

M. Sambandam. *Indian Textile J. 66:* 172-173 (December, 1955).

Experiments are briefly described which lead to the conclusion that elimination of the third passage of drawing does not affect yarn uniformity.

The Shirley roller vibration detector.

J. Textile Inst. 47: P158 (February, 1956).

The Shirley roller vibration detector enables roller vibrations to be detected at the source, and allows their probable effect on the strength of the yarn and the wavelength of the defects in the yarn to be calculated.

SPINNING, WINDING, TWISTING B 4

Variations of the yarn count in woolen spinning.

O. Lotterer. *Textile J. Australia 29:* 858-859 (September 20, 1954).

Brief examination of factors contributing to the variation of yarn count.

Application of control charts to the control of count in worsted spinning.

F. Monfort. *J. Textile Inst. 47:* P111-P119 (February, 1956).

The application of control charts and associated statistical procedure to the control of count in a fully conditioned worsted spinning mill is described and the accuracy required at the commencement of spinning is discussed.

Builder motions in the worsted industry: a survey of the main types.

H. A. McLean. *Wool Record 89:* 415-416 (February 23, 1956).

Types of lifter motion which are incorporated in many machines in the worsted industry, e.g. (1) the mangle type on all drawing and roving machines, (2) the heart and lever on spinning and doubling machines and (3) Scaife's motion on spinning and twisting machines, are discussed.

Features and adaptability of the woolen ringframe. Part 7.

J. A. B. Mitchell. *Textile Mfr. 82:* 130-132, 149 (March, 1956).

Control and coupling of the front roller, as well as the dual action of travelers on twisting and winding-on are discussed.

Constructional features in new endless belt stop-motion twisting frame.

J. and T. Boyd Ltd. *Textile Mfr. 82:* 136-137 (March, 1956).

A high speed cabling machine.

Maschinenfabrik Memmingen K.G. *Skinner's Silk and Rayon Record 30:* 270 (March, 1956).

The machine is equally applicable to synthetic filament yarns and to natural and synthetic staple fiber yarns.

Winding for doubling.

H. Marsden (Universal Winding Co.). *Textile Merc. 134:* 431-432, 434-436, 440, 444 (March 16, 1956).

Lecture surveys methods of winding and supply systems for special end-use requirements in twisting. Photographs.

Quilling yarns of Orlon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin OR-63.

Comparison between the Hacoba four spindle automatic pirn winder and the Hacoba one spindle automatic pirn winder.

J. Bergsen. *Melliand Textilber. 36, No. 11:* 1102-1106 (1955); *in German.* Through *BCIRA 36:* 90 (1956)..

Constructional details and peculiarities of the two automatic pirn winders are discussed and it is concluded that the Hacoba four-spindle winder (type SSA) should be used for all evenly-spun yarns, and the one-spindle winder (type ES) for yarns with large count variations.

YARNS B 5

Influence of yarn size on the relative contributions of six cotton fiber properties to strength of carded yarn.

R. W. Webb, Wash., U. S. Agricultural Marketing Service, 1955. 59 p. Marketing Research Report No. 109. Available from Superintendent of Documents, Washington 25, D. C. 35¢.

Six elements of raw-cotton quality were used in the correlation analyses as independent variables. They were: upper half mean length, length uniformity ratio, fiber fineness (weight per inch-Micronaire), fiber strength (Pressley-zero gauge), percentage of mature fibers (standard method), and grade index. Dependent variables used in the correlation analyses were: actual and converted yarn strength for each yarn; a series of K values of yarn strength representing different ranges of yarn size; and count-strength product of all yarn sizes collectively. Findings show that, as the yarn size decreased over the range of 22s to 50s, upper half mean length increased in importance to yarn strength and fiber strength decreased in importance to yarn strength. Fiber fineness increased in importance to yarn strength with decrease in yarn size from 14s to 50s. The three other quality factors studied made small contributions to yarn strength and showed no perceptible trends with yarn size. Tables. 31 references.

The arrangement of fibers in single yarns.

W. E. Morton (Univ. of Manchester). *Ann. Sci. Textiles Belges No. 3:* 29-48 (March, 1956).

This paper deals with the structure of ring spun yarns in reference to the phenomenon of fiber migration. The method of analysis used in conjunction with the tracer fiber technique is described, and suitable parameters for characterising the migratory behavior of fibers are discussed. Evidence of the effect of twist on the rate of migration is given in support of the contention that fiber arrangement is not merely one of random tangle; and experiments are described which throw light on the part played by the positions occupied by the fibers in the ribbon of drafted roving presented for twisting.

Shrinkage of du Pont nylon filament yarn, staple and tow.

E. I. du Pont de Nemours and Co., Inc. Wilmington, February, 1956. 4 p. Technical Information Bulletin N-51.

Stretch and/or bulk in synthetic continuous filament yarns.

Hosiery Trade J. 63: 93-96 (February, 1956).

Various types of stretch and bulk yarns are described and differentiated. Trade names, manufacturers, and applications are included.

Hibulk Acrilan.

S. J. Davis (Chemstrand Corp.). *Skinner's Silk and Rayon Record 30:* 258-261 (March, 1956).

A discussion of the properties and preparation of Hibulk Acrilan, as well as blend compositions recommended for yarn shrinkage and bulking, yarn strength, and textile processing.

The high bulk story.

P. H. Coker (J. L. Lohrke Co.). *Skinner's Silk and Rayon Record 30:* 276-278 (March, 1956).

The 3 systems for processing high bulked yarns and the characteristics of the yarns produced by each are described.

Tire cord—a story of progress.

J. H. Noyes (E. I. du Pont de Nemours Co.). *Southern Textile News 12:* 12, 68 (March 31, 1956).

The history of the successive replacement of leather, linen, cotton, rayon and nylon in tire cords is described.

A study of various physical properties of shoe threads available in Australia.

R. E. Spielrein. *Textile J. Australia 30:* 1074-1076, 1098-1101 (November 21, 1955).

Various physical tests have been carried out on lockstitch and blake shoe threads of different local and imported makes in use in Australia. The properties measured were those considered most likely to affect performance during the manufacture, use and repair of footwear.

FABRIC PRODUCTION C

Comparison of the analysis of pattern cards of various smallware and braiding mills.

E. Baugut. *Melliand Textilber. 36, No. 11:* 1110-1117 (1955); *in German.* Through *BCIRA 36:* 91 (1956).

Pattern cards of the individual plants are analysed with regard to production cost, sale, number and size of orders, etc. and the results are compared.

WARPING, SLASHING, YARN PREPARATION C 1

Sizing with polymeric acryl and methacryl acids.

H. Moroff. *Textil-Praxis 8:* 143-145 (February, 1953); *in German.* Translation in *Textile J. Australia 29:* 1242-1243, 1256-1257 (December 20, 1954).

Recommendations for sizing polyamide fibers and threads e.g. Perlon.

Slasher sizes for spun yarns of Orlon.

E. I du Pont de Nemours and Co., Inc., Wilmington, March, 1956. 2 p. Technical Information Bulletin OR-56.

Slasher sizing warps of filament Orlon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, February, 1956. 3 p. Technical Information Bulletin OR-58.

Representative size formulas are included.

Warp sizing of viscose rayon.

R. Cantegrit. *Rayonne et Fibres Synthet. 11, No. 11:* 1729-1735 (1955); *in French.* Through *BCIRA 36:* 90 (1956).

Factors affecting the sizing results and, consequently, weaving and dyeing are discussed under the headings: viscosity of the bath, level of the bath in the tank, manner in which the material passes through the bath and its velocity, material of the sizing and squeezing rollers, and squeezing force.

Drying chamber of the Positrol slasher.

Saco-Lowell Bull. 28: 21-28 (January, 1956).

Detailed diagrams of drying unit are given.

19 causes of cone-warper stops.

V. V. Rajwade. *Textile World 106:* 137 (March, 1956).

Rayon on beams to cut mill costs.

W. P. Crawley. *Modern Textiles Mag. 37:* 33, 52 (March, 1956).

Advantages and availability of beam supply packages for warp yarns are briefly noted.

Use these preparatory tips for filament weaving mills.

Textile Ind. 120: 122-123 (April, 1956).

Brief outline of steps for warping, slashing, and quilling that one filament weaving mill standardized for use with acetate and rayon medium denier yarns.

Warping yarns of Orlon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin OR-68.

WEAVING C 2

Remote control in the weaving shed: new looms.

Henry Livesey Ltd. *Textile Wkly. 56:* 656, 659 (March 9, 1956).

The most important feature of the model U, a cop or pirn-changing loom with two box positive weft mixing motion, is that all starting and stopping is done by push-button control and all starts and stops are predetermined by an electrical timing device. Other looms described are the AX automatic pirn-changing loom, WEM automatic non-stop shuttle-change loom, and 4 x 2 box mechanism loom.

Quality control in the cloth room.

W. Sproule. *Textile Ind. 120:* 131-134 (March, 1956).

A comprehensive review of a control program, including actually applied illustrations of flow charts, standard grading instructions, grading sheets, loom seconds and short-ends records, daily seconds defect report, cloth quality report, and

chart for conversion of yards-per-cut to defects points on a 100-yard basis.

Weave room records simplified with standard forms.

M. Haines. *Textile Ind. 120:* 158-162 (April, 1956).

Procedure for an easy conversion from pick clock reading to yards woven; pounds of warp and filling yarn used by various counts, and whether white or colored; loom efficiency; absorbed cost of production for weavers, battery men, fixers, and other indirect labor; and overhead.

A short dictionary of weaving.

M. E. Pritchard. Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y., 1956. 196 p. $6.00.

Names and terms relating to hand-weaving, hand-spinning and home finishing of textiles are defined for the beginner and information on loom types, weaving methods and fabric design is included in the appendices.

Attendance to several looms in the weaving mill, the machine number coefficient, and the overlapping of breakdown times.

G. Fenyvessy. *Textil- u. Faserstofftech. 5, No. 11:* 613-616 (1955); *in German.* Through *BCIRA 36:* 111 (1956).

The machine number coefficient and overlapping of machine breakdown periods are determined on the basis of the probability theory, and the practical applicability of the method is illustrated by examples.

A study in loom fixing. Part 6.

F. D. Herring. *Textile Bull. 82:* 87-89 (March, 1956).

Boxing of the shuttle and other factors causing excessive wear on the picker are discussed.

A new Northrop automatic wide loom for jute backing cloth for tufted carpets.

British Northrop Loom Co. Ltd. *Textile Merc. 134:* 392-393 (March 9, 1956).

Notes on the development of circular weaving.

W. Nicolet. *Melliand Textilber. 36, No. 11:* 1108-1109 (1955); *in German.* Through *BCIRA 36:* 91 (1956).

The history of the circular loom, from 1889 to date, is reviewed.

Shuttle box swell.

O. E. Hesse. *Melliand Textilber. 35:* 495-496 (May, 1954); *in German.* Translation in *Textile J. Australia 29:* 842-844 (September 20, 1954).

See *TTD 11:* 196 (1954).

Loom-action abrader evaluates warp sizes.

R. P. Ramirez and J. P. Vidosic. *Textile World 106:* 104-105 (March, 1956).

Initial tests on a loom-action abrader developed at Georgia Institute of Technology indicate that the effect of warp-sizing formulas on weavability of yarn can be tested in a laboratory. Elimination of up to 40% of all warp breaks is possible. Diagrams.

Weaving yarns of Orlon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 2 p. Technical Information Bulletin OR-60.

Weft tension in weaving.

F. Greenwood (British Rayon Research Association). Reply: M. Townsend (Wool Industries Research Association). (Letters to the editor). *J. Textile Inst. 47:* P128-P130 (February, 1956).

The effect on cloth quality of the tension during the shuttle flight and the tension when the shed closes is discussed in these letters.

KNITTING C 3

Keeping down needle costs in a knitting plant.

J. H. Quinn (Reading Testing Laboratories). *Hosiery Underwear Rev. 39:* 83, 100-101 (April, 1956).

For maximum performance of knitting machines an interplay of mechanical precision, lubrication and chemical cleansing are necessary.

A new British-built rib jersey machine—the Mellor Bromley Type 4/RD.

Hosiery Trade J. 63: 58-60 (March, 1956).

This new machine is designed to meet the growing need for cylinder-and-dial models that combine the knitting possibilities of existing rib and interlock types while at the same time offering wider patterning scope, better quality control, and greatly improved facilities for changing from one fabric to another. Photographs.

The control of quality of a knitted fabric. Part 1. Use of the yarn speed meter on revolving cylinder knitting machines.

D. L. Munden and N. J. P. Tansley. *Production Notes, No. 8.* The Hosiery and Allied Trades Research Association, Thorneywood

House, 4 First Avenue, Sherwood Rise, Nottingham, England. March, 1956. 20 p.

This report includes a simple, but effective, quality control scheme based on the use of the Yarn Speed Meter, and to avoid calculations having to be made in the factory, tables of figures are provided and their use explained in detail.

Satin stitches improve jersey patterns.

L. Prelog. *Textile World 106:* 126-127 (March, 1956).

Guide to the newer synthetic fibers and their applications to knitted goods.

Hosiery Trade J. 63: 78-80 (February, 1956).

Fiber trade names, manufacturers, and notes on uses in knitted goods are tabulated for over 80 fibers.

Metallic yarns in knitwear manufacture.

Hosiery Trade J. 63: 84-86 (February, 1956).

A brief review of uses, problems, and types of metallic yarns.

FABRICS C 4

Clothing and climate.

K. W. L. Kenchington. *Texture 3:* 11-17 (March, 1956).

The problem of providing clothing for different environments is discussed in relation to the basic thermal demands of the body and climatic conditions.

Design in woven structure. Part 40. Analysis of color-and-weave effects.

D. C. Snowden. *Wool Rev. 27:* 30-31 (March, 1956).

Stitched ribs, twills and hopsacks. Part 1. Methods of stitching.

D. C. Snowden. *Man-Made Textiles 32:* 52-54 (March, 1956).

Principles are given for preventing distortion and preserving the full effects of long-float designs.

Tartan patterns inspire terry designs.

T. Hargreaves. *Textile Mfr. 82:* 133-135 (March, 1956).

An outline of the scope and possibilities in adapting old but ever popular designs in other types of fabrics to high quality terry cloth constructions.

How to get stretch in all-cotton fabrics.

R. W. Pinault. *Textile World 106:* 128-129 (March, 1956).

Elastic-bandage fabric with 100% stretch built into the all-cotton material is possible by careful balancing of yarn twist and finishing methods.

Method of test for curl in textile fabrics.

J. Textile Inst. 47: P131-P133 (February, 1956).

Tentative Textile Standard No. 38, 1956.

The properties of textile materials. Part 4. Air porosity.

F. L. Warburton. *J. Textile Inst. 47:* P99-P105 (February, 1956).

The two main types of fluid flow (streamline and turbulent) and their relationship to air permeability studies in textiles are discussed.

Light transmission and air flow through nylon parachute fabrics.

A. Baker and J. E. Swallow. *J. Textile Inst. 47:* T102-T109 (February, 1956).

A photoelectric device was used to examine nylon parachute fabrics for variations of open area, and the dependence of air flow on open area was investigated. The conclusions reached were confirmed by means of the bubble-pressure method.

Performance characteristics of synthetic fibers, wool viscose, and blended fibers in Axminster carpets.

J. W. Schappel (American Viscose Corp.). *Textile Research J. 26:* 211-226 (March, 1956).

The study of various synthetic fibers, viscose, acetate, wool, and blends through service tests and investigation of fiber surface characteristics, soil pickup, luster, and electrostatic properties gives an understanding of the fiber soiling characteristics. Basic fiber requisites for soil resistance are shown to be: (1) smoothness of surface in the macro and micro dimension, (2) high reflectivity as found in delustered fibers, and (3) absence of oily or waxy finishes or contaminants which bond soil. The study of crush recovery of the various fibers proves the synthetics to be equivalent to or outperform wool in retention of original pile height and maintenance of residual compression. 50/50 blends of viscose and synthetics or wool do not exhibit crush-resistant properties equivalent to the average of the crush properties of the respective fibers entering the blend. Pile density is not considered an important factor in controlling crush recovery when fibers of different specific gravity are compared, and the pile density varies proportional to the specific gravity. Tables, graphs, photographs. 15 references.

Shelf life of neoprene coated nylon fabrics.

R. Briganti, Wash., U. S. Department of the Navy, 1955. 18 p. Available from the Office of Technical Services, Washington 25, D. C. PB 111 728. 75¢

The neoprene coated nylon fabrics exhibited little or no change in waterproofness, flexibility, breaking strength, weathering resistance and ability to withstand laundering and dry cleaning on storage.

Influence of twist on fibers and yarns. Part 8.

A. Webster. *Textile Mfr. 82:* 122-125 (March, 1956).

Crepe figure from S and Z crepe weft, sizing yarns before crepe twisting, uniformity, scouring and finishing, and pick and pick crepe fabrics are discussed.

The behavior of metallized fabrics to light irradiation.

G. Heyl and M. Kramer. *Melliand Textilber. 36, No. 11:* 1161-1166 (1955); *in German.* Through *BCIRA 36:* 102 (1956).

The effectiveness of metal finishes on fabrics is discussed, with reference to (a) the resistance of the treated fabric to photochemically active irradiations, (b) the protection against heat radiation, and (c) the improvement of heat-retaining capacity. The uses of metallized fabrics are briefly mentioned.

The effect of certain physical characteristics of fabrics upon heat transmission.

D. L. Aelion and H. C. Brown. *Bull. Lowell Tech. Inst. Series 59, No. 3:* 3-14 (February, 1956).

Measurements made on 46 fabrics of different fiber content and of different physical characteristics indicate that fabric thickness modified by a porosity coefficient has the greatest effect upon heat transmittance.

The thermal conductivity of selected flannel and serge fabrics before and after wear.

E. L. Phelps, M. A. Morris and L. O. Lund. *Am. Dyestuff Reptr. 45:* 181-183 (March 26, 1956).

The results of studies of the thermal conductivity of certain flannels and serge fabrics when new, after periods of drycleaning alone, and after wear plus drycleaning are presented. The fabrics included three weights of serge and five flannels, which varied in composition from all new wool to all reused wool. 6 references.

Effects of light on dyed textile materials.

I. Hopkins. *Textile J. Australia 29:* 463-464 (June 20, 1955).

The effects of intensity and duration of light, type of light, temperature, relative humidity, and the moisture content of the sample, and atmospheric impurities and catalysts in the air and material on fading and degradation are briefly reviewed.

Lowenstein-Enka's new denim called radical fabric advance.

M. Lowenstein & Sons, Inc. and American Enka Corp. *Am. Textile Reptr. 70:* 11, 35 (March 22, 1956).

Lane KR-3 has viscose yarn filling in cotton warp. Basic changes in hand fastness, tensile strength abrasion resistance and washability are described.

Filter fabric facts.

Wellington Sears Co., 65 Worth Street, New York 13, N. Y., 1954. 17 p.

Factors involved in the development of filter fabrics from nylon, Orlon, Dynel and cotton, (e.g. fiber, yarn and fabric properties) are discussed and typical filter fabrics are described. Photographs.

The outlook for fur-like pile fabrics.

D. Weiss. *Modern Textiles Mag. 37:* 74-76 (March, 1956).

Paper given before American Association for Textile Technology, Inc.

Concerning the sewing of hosiery and woven fabric.

P. Leonhardt. *Textil-Praxis 9:* 165-167 (February, 1954); *in German.* Translation in *Textile J. Australia 29:* 1224-1225 (December 20, 1954).

See *TTD 11:* 295 (1954).

FINISHING AND CHEMICAL PROCESSING D

Organic phosphates and their role in textile finishing.

W. Linke. *Melliand Textilber. 36, No. 11:* 1159-1161 (1955); *in German.* Through *BCIRA 36:* 94 (1956).

Brief reference is made to the potential uses of the organic phosphoric acid derivatives whose preparation and properties are described.

CHEMICAL PROCESSES D 1

Notes on chlorite bleaching.

L. Keiner and H. Bergs. *Z. ges. Textil-Ind. 54:* 1053-1075 (1952); *in German.* Translation in *Textile J. Australia 29:* 939-944, 946-949, 966-969 (October 20, 1954).

Optical bleaching agents.

R. O. Rutley. *The Cobbler 8:* 20-24 (1955-56).

Lecture on the mechanism of action, evaluation, and application of optical bleaching agents. 7 references.

The supervision of operations in the bleachery.

H. Hundt. *Textil-Praxis 9:* 79-82 (January, 1954); *in German.* Translation in *Textile J. Australia 30:* 171-174 (April 20, 1955).

The importance of checking all factors in the systematic supervision of bleachery operations in order to reduce defective production and costs is emphasized and methods are described.

Soap in scouring and bleaching textiles.

Textile Mfr. 82: 145-146 (March, 1956).

Brief review on the emulsifying action of soaps and their use in cotton bleaching, kier boiling, wool scouring and bleaching, silk degumming, bleaching and stoving, and oil stain removal.

Functions of emulsion scouring sets.

R. Walker (John R. Walker and Sons Ltd). *Textile Mfr. 82:* 111-116 (March, 1956).

The requirements, operation and modifications of scouring sets, as well as scouring agents, pH control and types of dryers are discussed. Photographs. Diagrams.

Piece scouring.

J. F. Moxon. *The Cobbler 8:* 39-44 (1955-56).

Lecture on scouring variations as the cause of unlevel dyeing.

Practical warp mercerizing.

S. M. Edelstein (Dexter Chemical Corp.). *Textile Ind. 120:* 147-155 (April, 1956).

The author discusses: advantages and disadvantages; strands versus free warps; wet versus dry mercerizing; type of caustic bath unit and its control; tension control; washing; neutralization; and drying.

Resin finishing of fabrics composed of native and regenerated cellulose.

E. Schober. *Fibres 17:* 86-91 (March, 1956).

This review of the chemical and physical processes that take place in crease-resist finishing gives special consideration to the products based on urea-formaldehyde.

Correct drying and curing (baking) within the process of synthetic resin finishing.

F. Hagen. *Reyon Zellwolle Chemiefasern. 32:* 208-211 (April, 1954); *in German.* Translation in *Textile J. Australia 30:* 95-98 (March 21, 1955).

Basic principles and details in the choice of finishing procedures are discussed.

Finishing of synthetic fabrics.

T. F. Cooke and P. B. Roth (American Cyanamid Co.). *Textile Research J. 26:* 229-242 (March, 1956).

The paper is concerned with the new durable, functional finishes which either have already become commercially important or appear to have commercial possibilities for improving such fabric properties as wrinkle resistance, water repellancy, spot resistance, soil resistance, fire resistance, change in hand, shrinkage, wear life, wash fastness of dyes, and mechanical finishes. Graphs, photographs. 12 references.

The effects of creaseproof finishing upon the fastness to light in dyeing with direct dyestuffs.

H. Hansen and H. G. Buddicker-Lons. *Textil-Praxis 9, No. 9:* 863-865 (1954); *in German.* Translation in *Textile J. Australia 30:* 379-383 (May 20, 1955).

See *TTD 12:* 154 (1955).

Soil-resistant treatment of fabrics.

J. M. Salsbury, T. F. Cooke, E. S. Pierce and P. B. Roth (American Cyanamid Co.). *Am. Dyestuff Reptr. 45:* P190-P202 (March 26, 1956).

The mechanism of dry soiling is considered and the action of a soil-resistant finish is proposed. A laboratory method for measuring the dry-soiling properties of fabrics is described. Methods are given for applying soil-resistant materials in the laboratory and under commercial conditions. The results of laboratory tests are compared with actual wear tests on carpets made of a number of different fibers. A newly developed soil-resistant finish, Juvenon Soil Retardant R, is described. In small quantities it greatly reduces the soiling properties of fabrics. The main advantages of this soil retardant over earlier types are said to be a softer hand and little or no effect on the light fastness of dyes. Photographs, tables, graphs. 29 references.

Deterioration of polyamide fibers by heat and light: recent progress in improving stability.

A. J. Hall. *Texture 3:* 18-20 (March, 1956).

The use of chromium, copper, phosphorous acids and organic compounds for improving the stability of polyamide fibers during dyeing and finishing is discussed.

The chemical treatment of cotton and wool.

G. E. Goheen and A. M. DuPré, Jr. (Southern Regional Research Laboratory). *Chem. Eng. Prog. 52:* 111M-114M (March, 1956).

Brief summary of finishing procedures and chemical modifications of cotton and wool fibers to enhance their performance characteristics.

The treatment of wool to impart resistance to felting shrinkage.

M. Wilkinson. *Textile J. Australia 29:* 774, 776, 778, 780 (September 20, 1954).

The article discusses (1) requirements of a shrink resistant treatment, (2) theories of felting and felting prevention, and (3) the effectiveness of various shrink resistant treatments. 16 references.

The stabilization of viscose fabrics.

W. J. Ratcliffe. *Can. Textile J. 73:* 68-69 (March 9, 1956).

Some of the chemical processes involved in the stabilization of viscose fabrics are briefly reviewed.

A new high capacity washing machine.

R. Hünlich. *Rayonne et Fibres Synthet. 11, No. 10:* 1677-1678 (1955); *in French.* Through *BCIRA 36:* 93 (1956).

The new washing machine (Menzel system) is constructed on the principle that dissolution takes place more rapidly if the more concentrated liquid layer which forms around the solvent is strongly agitated. Owing to its higher washing power, small tanks are sufficient; these are provided with tubular devices perforated on the surface. The nozzles and pipes discharging the wash liquor are mounted so that a flow of liquid starting from the center exerts a fan-shaped action on the material to be washed, the flow velocity increasing towards the periphery. The liquid issuing from the nozzles mixes repeatedly with the bath, producing in it violent eddies which increase continuously the washing action. A pump placed in the tank reverses the direction of the liquid every 1-2 minutes.

Modern shower-proofing.

M. Kolker. *Dyer 115:* 331-332, 335-336 (March 2, 1956).

Lecture covers variety of available water-repellents, pad and dolly methods of application, and fastness testing.

Silicones as water-repellents in the textile industry.

R. Ticozzi. *Tinctoria 52, No. 11:* 429-435 (1955); *in Italian.* Through *BCIRA 36:* 96 (1956).

A review with fifteen references.

How to produce flocked fabrics.

E. L. Dale (Pierce and Stevens, Inc.). *Textile World 106:* 96-98 (March, 1956).

The importance of the proper choice of the fabric, flock, adhesive, and application method in the production of flocked fabrics is stressed.

Drycleaning deep-pile coats.

A. E. Johnson. *Modern Textiles Mag. 37:* 77-78 (March, 1956).

Paper given before American Association for Textile Technology, Inc.

DYEING AND PRINTING D 2

Deutscher Farberkalender 1956.

O. Mecheels (Editor). Franz Eder Verlag, Munich, v. 60, 368 p. Tables. Calendar. Advertisements. *In German.* Through *BCIRA 36:* 92 (1956).

The 60th volume of the German Dyer's Calendar contains data on German chemical fibers (cellulose and synthetic), an alphabetical list of new products and dyes, a list of dyeing schools and official testing stations, a table for qualitative differentiation between wetting agents and detergents, and an addendum containing chemical data, conversion tables and an index to trade names, products and manufacturers of particular classes of material. The volume also contains short articles on dyeing, printing and finishing.

Faster shades on cellulose fibers.

A. J. Hall. *Textile Merc. 134:* 320, 322, 325 (February 24, 1956).

Some new after-treatments for improving fastness in cotton are described.

The influence of the dyeing method on the utility of wool.

P. Fink. *Textile J. Australia 29:* 197-199 (April 20, 1954).

Based on a paper by Dr. Fink, *in German,* in the *Textil-Rundschau 8:* 279-302, 346-368, 543-557, 613-622 (1953). See *TTD 11:* 156 (1954).

Metallizable dyestuffs.

W. C. Castle. *Textile J. Australia 29:* 1396-1400 (January 20, 1955).

This lecture concerns the dyeing of wool with Cibalan dyestuffs as compared with chrome and Neolan dyes.

Wool dyeing and some of its problems.

J. L. Waldo (Allied Chemical & Dye Corp.). *Dyestuffs 41:* 101-110 (March, 1956).

Acid, premetallized, and chrome dyes, vat leucoesters, and indigo, and their application are briefly covered.

Problems of the wool dyer.

D. L. Turner. *Textile J. Australia 29:* 1268-1273 (December 20, 1954).

This lecture on sources of dyeing faults and their prevention points out that only a small percentage of uneven dyeings can be attributed to the dyeing technique itself.

Modern trends in printing, dyeing, and finishing.

Ciba Rev. No. 113: 4141-4148 (February, 1956).

Bright turquoise blue and green shades of high fastness on wool and unions, by R. Casty, p. 4141-4144; *Cibalan black BGL,* p. 4144-4147; *Continuous dyeing of wool raw stock with Cibalan dyes,* p. 4147-4148.

A new approach to dyeing.

L. Peters and C. B. Stevens (Leeds Univ.). *Dyer 115:* 327-329 (March 2, 1956).

Rapid dye adsorption using certain solvents suggests low temperature techniques for wool.

Union piece dyeing.

F. Illingworth. *The Cobbler 8:* 32-38 (1955-56).

Lecture on methods of dyeing Union gabardine, wool/Fibro, wool/nylon and wool/Terylene.

Dyeing Arnel tricot.

R. G. Stoll (Celanese Corp.). *Modern Textiles Mag. 37:* 48, 50 (March, 1956).

Dyeing methods based on dyehouse practices.

The dyeing of cellulose acetate with nonionic dyes. Part 3. Dyeing from the vapor phase.

T. G. Majury. *J. Soc. Dyers Colourists 72:* 41-49 (February, 1956).

13 references.

The dyeing of acetate rayon with disperse dyes. Part 5. Diffusion coefficients in cellulose acetate film.

C. L. Bird, F. Manchester, and D. F. Scott. *J. Soc. Dyers Colourists 72:* 49-55 (February, 1956).

The results indicate that the rate of dyeing of disperse dyes is mainly governed by the rate of diffusion in the fiber. 28 references.

Dyeing and finishing of cellulose acetate.

A. S. Cluley. *Rayonne et Fibres Synthet. 11, No. 10:* 1611-1620. *No. 11:* 1747-1766 (1955); *in French.* Through *BCIRA 36:* 93 (1956).

After having reviewed the physical and chemical properties of cellulose acetate, the author discusses the nature of the available dyes and various methods which can be used to obtain dyeing with satisfactory fastness properties. In part 2, dyeing problems are discussed, with reference to hank-dyeing, dyeing on bobbins and in the mass, piece-goods dyeing and jig-dyeing. The production of acetate crepe fabrics and of fabrics from blends containing cellulose acetate is also mentioned.

Dyeing and finishing Dacron.

E. I. du Pont de Nemours and Co., Inc. Wilmington, February, 1956. 41 p. Technical Information Bulletin D-73.

The classes of dyes and the methods recommended for dyeing Dacron and Dacron blends with cellulosic fibers, nylon, Orlon and silk are described and information on printing, stripping disperse dyes, scouring, bleaching, heat-setting, drying, carbonizing and finishing for pill control is included.

Tints for filament Dacron.

E. I. du Pont de Nemours and Co., Inc. Wilmington, March, 1956. 1 p. Technical Information Bulletin D-74.

A note on the diffusion of disperse dyes in nylon yarn.

C. L. Bird and D. F. Scott. *J. Soc. Dyers Colourists 72:* 56-57 (February, 1956).

The results support the view that rate of dyeing is mainly governed by rate of diffusion of dye in the fiber. 3 references.

Dyeing upholstery fabrics of du Pont nylon and nylon/cellulosic fabrics.

E. I. du Pont de Nemours and Co., Inc. Wil-

mington, January, 1956. 2 p. Technical Information Bulletin N-58.

Tow dyeing produces high-bulk jacquard pattern knitwear.

Skinner's Silk and Rayon Record 30: 282-284 (March, 1956).

Discussion of the advantages and disadvantages of tow dyeing Orlon as compared to stock, top and yarn dyeing in the manufacture of high-bulk knitwear. Dyeing procedures are briefly described.

Advances in dyeing Orlon type 42 knitwear.

J. P. Neary and R. J. Thomas (E. I. du Pont de Nemours and Co., Inc.). *Skinner's Silk and Rayon Record 30:* 285-288 (March, 1956).

Methods for the application of cationic dyes to knitwear made of Orlon type 42 acrylic fiber and blends of Orlon and wool are described. 8 references.

Solution dyed shades on viscose yarn.

H. Palfreeman (Courtaulds (Canada) Ltd). *Can. Textile J. 73:* 57-58 (March 23, 1956).

Results of Ontario Research Foundation's full range of color fastness tests on 7 colors: these tests cover, as far as possible, the various conditions to which viscose yarn may normally be exposed in processing or in ultimate use.

Dyeing viscose rayon above 100° C.

D. Cooke (I.C.I. Ltd). *Textile Mfr. 82:* 140-144 (March, 1956).

The machinery and optimum conditions for high temperature dyeing of viscose rayon cakes, staple fiber packages and filament piece goods with direct and vat dyes are discussed and the limitations of the processes emphasized.

Modern dyeing technique and sulfur colors.

H. Senior (Messers. James Robinson & Co. Ltd). *Textile J. Australia 29:* 340-342, 382-384 (May 20, 1954).

Some of the latest methods of application, in particular the high temperature package dyeing machines, are considered.

Some practical aspects of high temperature dyeing.

W. F. Rogers (Ciba Ltd). *Textile J. Australia 29:* 1400-1404 (January 20, 1955).

Lecture on classes of dyes and conditions of high temperature dyeing for synthetic fibers, cotton, rayon and wool. 12 references.

Particle size influence in vat dyeing.

R. J. Willis. *Can. Textile J. 73:* 65-66 (March 9, 1956).

Evaluation of particle size and its influence on finished material.

Tailoring engineering to modern dyer's requirements.

K. Limbert (Longclose Engineering Co.). *Dyer 115:* 447-457 (March 16, 1956)..

Lecture on problems facing dyers and how these problems are solved by manufacturers of dyeing machines. Photographs.

Technology of disperse dyes. Part 1. Introduction.

A. Datyner. *Man-Made Textiles 32:* 69-70 (March, 1956).

Types of disperse dyestuffs, their peculiarities and their mechanism of action are briefly discussed.

Direct dyestuffs suitable for application at temperatures of over 212° F. (100° C.).

E. Herrmann. *Melliand Textilber. 33:* 1110-1112 (1952); *in German.* Translation in *Textile J. Australia 29:* 980, 982, 1018-1021 (October 20, 1954).

See *TTD 10:* 1341 (1953).

Objectionable results in dyeing and their elimination.

W. Dahlhaus. *Textil-Praxis 8:* 250-252 (March, 1953); *in German.* Translation in *Textile J. Australia 28:* 1488, 1490-1492 (February 20, 1954).

See *TTD 10:* 1503 (1953).

Side to center shading on piece goods.

J. Le Menn. *Can. Textile J. 73:* 71-72 (March 9, 1956).

An outline of some of the reasons for side to center shading and suggestions for its cure.

Printing of polyacrylonitrile textiles.

R. Walter. *Melliand Textilber. 36, No. 11:* 1146-1151 (1955); *in German.* Through *BCIRA 36:* 94 (1956).

Reference is made in particular to direct printing with disperse, triphenylmethane and polymethine, vat, acid, and pigment dyes, and leucoesters of vat dyes, and to discharge printing. The application of white and color discharge printing on acetate rayon, nautral silk and wool is also briefly mentioned.

Time, temperature and humidity in ageing acetate discharges.

Y. St. Louis. *Can. Textile J. 73:* 70-71 (March 9, 1956).

Control factors and principles that govern ageing in relation to acetate printing are highlighted.

Printing behavior and physical properties of alginate thickeners.

K. Schmidt. *Melliand Textilber. 36, No. 11:* 1144-1146 (1955); *in German.* Through *BCIRA 36:* 94 (1956).

The principles and practice of color stripping.

N. A. Matlin and W. C. Lindsly (Rohm & Haas Co.). *Am. Dyestuff Rept. 45:* P168-P172 (March 12, 1956).

The mechanism of stripping is discussed briefly, followed by a discussion of the practical aspects. Each process that takes place in the stripping operation is considered separately, and its interaction with the others qualitatively or semiquantitatively is described. The hydrophilic fibers offer no problem in stripping, while for the hydrophobic fibers diffusion of the stripper into the fiber and corresponding diffusion of the reduction products out of the fiber are important. 7 references.

DRYING D 4

Drying: annual review of unit operations.

E. Bagnoli (E. I. du Pont de Nemours & Co., Inc.). *Ind Eng. Chem. 48:* 500-504 (March, 1956).

Includes recent advances in textile drying.

German rotary rod yarn drier.

Maschinenfabrik Friedrich Haas GmbH & Co. *Fibres 17:* 78 (March, 1956).

TESTING AND MEASUREMENT E

Some theoretical aspects of the Lot Plot sampling inspection plan.

L. E. Moses. *J. Am. Statistical Assoc. 51:* 84-107 (March, 1956).

The Lot Plot Plan is a modified variables sampling and testing scheme, which requires 50 tests per lot and use of the plot of the variation pattern. The efficiency of the plan in evaluating the quality of lots is examined from a mathematical probability viewpoint, with the conclusion that this method yields little value over more conventional statistical methods but has psychological value in mill use.

Application of electronic metal detection in textile industry.

R. B. Parikh. *Indian Textile J. 66:* 241-242 (January, 1956).

Brief description of Boekels' electronic metal detector and its applications.

Identification of defects in textiles.

N. Bigler. *SVF Fachorgan Textilveredlung. 10, No. 11:* 574-621 (1955); *in German.* Through *BCIRA 36:* 99 (1956).

A condensed review is made of the most important defects in cotton, viscose rayon, synthetic fibers and wool, and of their detection by means of chemical and microscopical methods. Detailed directions are given for carrying out these methods, and practical examples are quoted and illustrated with photomicrographs. Extracts from the discussion following this colloquium are appended.

The recording spectrophotometer in service of the textile chemist.

U. V. Solanki. *Indian Textile J. 66:* 164-168 (December, 1955).

Description and operation of G. E. Recording Spectrophotometer and its textile applications. Diagrams.

FIBERS E 1

Technique for handling transmission replicas in electron microscopy.

D. H. Page (British Paper and Board Industry Research Association). *Research 9:* S10-S11 (March, 1956).

Description of a handling technique which allows a higher percentage of successful fiber replicas to be obtained than is usually possible.

Electron microscope studies of the surface structure of wool and other fibers.

N. Ramanathan, J. Sikorski, and H. J. Woods. *Biochim. Biophys. Acta 18, No. 3:* 323-340 (1955). Through *BCIRA 36:* 100 (1956).

Results obtained with Lincoln wool fibers are reported in detail, and micrographs of the surfaces of cotton, jute, acetate rayon, and raw silk fibers are also shown.

Comparison of reflection and transparency tests.

H. Reumuth. *Rayonne et Fibres Synthet. 11, No. 11:* 1807-1818 (1955); *in French.* Through *BCIRA 36:* 99 (1956).

Comparison is made of microscopical methods based on experimental data, obtained on artificial

and synthetic fibers by examining them in incident and reflected light, respectively. Photomicrographs are given and sixteen literature references are quoted.

The microscope in the laboratory and in the plant.

R. Gander. *SVF Fachorgan Textilveredlung. 10, No. 11:* 621-626 (1955); *in German.* Through *BCIRA 36:* 98 (1956).

After a brief historical review, the author discusses modern microscopical methods for examining textile fibers, with special reference to phase-contrast method, the polarization method, and the ultra-violet and blue-light fluorescence method.

An improved adjustment to resonance for measuring by vibroscope.

G. J. Hilferink. *Enka Breda Rayon Rev. 10:* 17-23 (February, 1956).

In using the vibroscope for measuring the denier of short single filaments, quick and simple adjustment to resonance is effected by reading the maximum deflection of the vibrating filament on an ordinary micro-ammeter, thus eliminating the use of a magnifying glass altogether. 3 references.

Starting and stopping oscillations of an Instron tensile testing instrument.

G. A. J. Orchard. *J. Textile Inst. 47:* T53-T57 (February, 1956).

Satisfactory measurements of decay of the tension in textile fibers following high rates of extension can be made on the Instron Tensile Testing Apparatus by using (1) recording apparatus with a shorter response time than normally supplied and (2) suitable fiber length.

An electronic moisture meter for jute: its design and construction.

B. L. Banerjee and M. K. Sen (Indian Jute Mills Assoc. Research Inst.). *J. Sci. and Ind. Research (India) 15:* 24-28 (January, 1956).

An evaluation of methods for determining the linters content of cottonseed.

M. E. Whitten and C. E. Holaday, Wash., U. S. Agricultural Marketing Service, 1956. 8 p. AMS-51 Supplement 1.

Results of field tests made with the forced-draft, infra-red and vacuum methods have resulted in the inclusion of the infra-red method as an official one.

Cotton quality and fiber properties. Part 4. The relation between single fiber properties and the behavior of bundles, slivers, and yarns.

W. P. Virgin and H. Wakeham (Textile Research Institute). *Textile Research J. 26:* 177-191 (March, 1956).

The purpose of this research was to evaluate the use of single-fiber testing methods for the determination of cotton fiber properties and for the prediction of yarn quality. Single fibers were tested for their fineness and mechanical properties: crimp, Hookean slope, breaking load, elongation, elastic modulus, breaking stress, and energy to rupture. The results were compared with the mechanical properties of the fiber bundles, slivers, and yarns. They suggest that yarn strength and elongation are related to the single fiber properties and can be predicted from them fully as well as from bulk measurements of fineness and bundle strength data. They also indicate that elastic modulus is an important parameter for predicting fiber assembly behavior. Tables, graphs. 21 references.

The highest standard warp count—an explanatory note.

C. Nanjundayya, Bombay, Indian Central Cotton Committee Technological Laboratory, 1955. 8 p. Technological Bulletin, series A, No. 88.

The method used by the Technological Laboratory for assessing the spinning value of cotton is described.

Report on cotton fiber test programs.

International Cotton Advisory Committee. Wash., 1955. 76 p.

A world-wide survey of cotton testing programs as performed by governmental and private organizations. 24 countries in Europe, South America, Africa, Asia and North America are included.

The staple diagraph.

W. Wegener and E. Haase-Deyerling *Melliand Textilber. 36, No. 11:* 1097-1101 (1955); *in German.* Through *BCIRA 36:* 99 (1956).

Constructional details and the mechanism of the individual components are discussed. The action of the condenser is determined by calculation; the equations obtained show very good agreement with the corresponding measured values, indicating satisfactory performance of the apparatus and the accuracy of this rapid method for determining staple length. Evaluation of the staple diagram, and its graphical integration for determining the percentage weight, are described.

Identification of textile fibers by dye staining techniques.

J. D. Donovan, J. A. Beegan and G. H. Hummel, Jr. (Maryland Department of Health).

(Letter to the editor). *Textile Research J. 26:* 227-228 (March, 1956).

Acetate, viscose, Bemberg, cotton, wool, Vicara, nylon, Dynel, Acrilon, Orlon 81, Orlon 42, and Dacron fibers are easily distinguished by the use of Du Pont Identification Stain No. 4. A brief summary of experimental results and outline of the procedure are given.

Identification of fibers.

E. I. du Pont de Nemours and Co., Inc. Wilmington, January, 1956. 5 p. Technical Information Bulletin X-12.

Methods for the identification of fibers in a textile material containing one or more of the following: acetate, cotton, Dacron, nylon, Orlon, rayon, silk, and wool, are suggested. Microphotographs of various fibers are included.

The determination of fatty matter in scoured wool and wool tops.

T. Green, R. P. Harker and F. O. Howitt. *J. Textile Inst. 47:* T110-T126 (February, 1956).

The determination of residual grease, soap constituents and other fatty material in scoured wool, card slivers, tops, etc., by means of solvent extraction is critically examined, especially in relation to the technical implication of the results obtained. A comparison is made between Soxhlet extraction and extraction by the Wool Industries Research Association rapid extraction apparatus. Certain anomalies in the results are discussed. Tables. 9 references.

Pressure core sampling of grease wool for clean fiber determination.

G. C. Le Compte and H. R. Keller, Wash., 1955. 5 p. Agricultural Marketing Service. AMS-55.

Pressure core-sampling has been shown to be a practicable physical process, possessing several advantages over rotary core-sampling and giving acceptable accuracy.

YARNS E 2

The principle of continuous testing.

A. H. Milnes. Cook & Co., Manchester, Ltd., 18 Exchange Street, Manchester 2, England. 17 p.

Theory and application of a continuous strength testing machine developed for the purpose of mill control, quality comparison, and evaluation of strength uniformity of yarns. Translation of the results into anticipated loom-stoppages and related applications are shown.

Graphical determination of the weight of yarn constituting a fabric.

Rayonne et Fibres Synthet. 11, No. 10: 1599-1607 (1955); *in French.* Through *BCIRA 36:* 101 (1956).

In an earlier article a method was described which was based on the use of three graphs and made it possible to determine the weight of warp and weft yarn from the density and count of the yarn, the width of the fabric and the shrinkage. It is now shown that it is possible to increase the advantages of the graphical method and to obtain the same relative accuracy by using logarithmic scales. For this purpose, a cross-ruled diagram was set up in addition to a graph with aligned points, and their use is explained in detail.

School develops a constant winding yarn tester.

H. M. Brown (Clemson School of Textiles). *Bobbin and Beaker 14, No. 3:* 8-10 (1956).

In the continuous yarn testing machine developed at Clemson, the problem of slippage is solved by means of snubbing drums. Applications and advantages of the machine are discussed.

New method measures hardness of yarn twist.

C. Gordon (Albany Felt Co.). *Textile World 106:* 92-93 (March, 1956).

A formula for the calculation of twist constants is given.

A study of twist distribution in irregular yarn.

C. Sustmann. *J. Textile Inst. 47:* P106-P110 (February, 1956).

Methods used and results of an investigation on the relationship between yarn twist and yarn diameter. 4 references.

An electronic detector will search for unevenness.

G. M. Bornet. *Design Engineering 1:* 37, 78 (June, 1955).

The principle of operation of the Sigma Unevenness Tester, developed by the Ontario Research Foundation and produced by Electronic Associates Ltd. for the measurement and evaluation of variations in sliver, roving and yarn is discussed.

A simple method of plotting the correlogram of worsted yarns.

W. J. Onions and A. Selwood (Univ. of Leeds). (Letter to the editor). *J. Textile Inst. 47:* T127-T128 (February, 1956).

The use of the correlogram for comparing the periodicity of yarns against other physical phenomena is discussed.

New concepts of yarn hairiness.

A. Barella. *J. Textile Inst. 47:* P120-P127 (February, 1956).

The number of projecting fibers per millimeter of worsted yarn length has been used as a new parameter to derive the relation between the coefficient of variation of apparent diameter and that for the number of projecting fibers. 14 references.

Testing the picker lap.

Saco-Lowell Bull. 28: 5-9 (January, 1956).

Method of analyzing lap charts from Saco-Lowell lap meter for standard deviation and coefficient of variation.

FABRICS E 3

The detection of bleaching damages, especially in fabrics from spun rayon/cotton blends, with regard to the quality index of industrial products.

W. Himmelreich. *Textil- u. Faserstofftech. 5, No. 11:* 623-628 (1955); *in German.* Through *BCIRA 36:* 102 (1956).

It is shown that by determining the degree of polymerization (D.P.) and calculating from it the damaging factor, conclusions can be drawn as to the wear value of a bleached article and its quality class can be determined. For blends of cotton and spun-rayon yarn, for which the determination of the D.P. presents difficulties, a sodium hydroxide swelling method was found the best means of determining the state of both cotton and spun rayon after the bleaching process. This method also makes possible the determination of the percentage of spun rayon present in the mixture.

ISO proposal on methods for testing colorfastness of textiles.

International Organization for Standardization. *Am. Dyestuff Reptr. 45:* P150-P167 (March 12, 1956).

Proposed methods for testing colorfastness to acid and alkali spotting, bleaching with hypochlorite and peroxide, carbonizing with aluminum chloride and sulfuric acid, chlorination acid, light, mercerizing, metals in the dyebath, organic solvents, potting, pressing, rubbing, soda boiling, stoving, washing, and water are presented.

The measurement of tearing strength of textile fabrics.

L. H. Turl (Defence Research Medical Laboratories, Toronto). *Textile Research J. 26:* 169-176 (March, 1956).

Sixteen fabrics of military interest have been tested by the Tongue (single rip) method and the Trapezoid method, on both pendulum and inertialess testing machines. The experimental data for these fabrics are analyzed to permit a comparison of both methods and both machines. It is concluded that existing test method procedures are vague in respect to the interpretation of the data obtained, and results given by the two types of testing machines differ significantly. Tables, graphs. 6 references.

How to use stretch and snag tests.

E. N. Ditton. *Modern Textiles Mag. 37:* 43, 46, 58, 60, 78 (March, 1956).

Standard stretch method—ASTM D-1058, tests for snag resistance of hosiery—ASTM D-1115 and AATCC 66-54 and modifications of these methods for stretch hosiery are described.

On the determination of the stretch of knitwear.

A. A. J. Kramers and E. Heukers. *Enka Breda Rayon Rev. 10:* 31-34 (February, 1956).

Method for determining the lateral stretch of stockings is described and a method applicable to other knitted fabrics is suggested.

The incidence of microbiological damage in unlined flax forestry fire hose.

G. R. F. Rose, M. Mitton, B. J. Gardner and C. H. Bayley. *Textile J. Australia 29:* 1468, 1470-1471, 1521 (February 21, 1955).

A staining technique for differentiation between fungal mycelia and cellulosic fibers under the microscope is described. The principles underlying the use of textile fungicides, to prevent such attack, are discussed.

Finishes resistant to washing.

G. Strauch. *Melliand Textilber. 36, No. 11:* 1166-1168 (1955); *in German.* Through *BCIRA 36:* 94 (1956).

After a brief review of the existing methods for determining the washing resistance of textile finishes, the author describes a simple method, in which the finishing agent is applied to filter-paper strips (dried to constant weight and weighed), which are then dried and condensed, if necessary, under the same conditions as the respective textile material and tested.

OTHER E 4

A capitance-resistance hygrometer.

C. L. Cutting, A. C. Jason, and J. L. Wood. *J. Sci. Instr. 32, No. 11:* 425-431 (1955). Through *BCIRA 36:* 103 (1956).

A type of hygrometer is described in which indications of relative humidity are given by changes of the electrial properties of anodized aluminium oxide layers. The calibration is independent of temperature from 0° to 80°C, and of the air speed. The theory of the operation of the instrument is outlined.

The measurement of humidity.

D. E. Brooks. *Instrum. Engr. 1, No. 8:* 155-161 (1955). Through *BCIRA 36:* 103 (1956).

The history of humidity measurement is briefly reviewed and the essential theory is outlined. Instruments suitable for industrial use are described, and finally, the applications of humidity measurement in the textile and paper industries are discussed.

1955 book of ASTM standards including tentatives. Part 7.

American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., 1956. 1658 p.

354 standard specifications, of which 166 are new or revised since 1952, are included, as well as tests and definitions for the materials covered.

Effect of the oxidizability of oil-containing preparations on rayon fibers and fabrics. Part 3. Methods of textile analysis.

K. Taüfel, R. Vogel and A. Wickleinl. *Faserforsch. u. Textiltech. 6, No. 11:* 489-495 (1955); *in German.* Through *BCIRA 36:* 90 (1956).

In contrast to the Mackey test which is limited to olefinic fats and fatty acids, the filter-paper test gives valuable data with regard to the oxidizability of all raw materials, intermediate products, and finished textile preparations. The yellowing of treated cellulose material and of titaniumdioxide delustered rayon is associated with the stability of the preparations used.

ASTM standards on soap and other detergents (with related information, 1955).

American Society for Testing Materials, Committee D-12, 1916 Race Street, Philadelphia 3, Pa., 1955. 168 p. $2.50.

Included in this compilation are seventeen specifications for soaps and soap products, nine specifications for various alkaline detergents, and fifteen methods of analysis covering soaps and other detergents. Definitions of terms applying to these materials are also included. The specifications, methods of test, and definitions represent the work to date of ASTM Committee D-12 on soaps and other detergents.

ASTM standards on textile materials (with related information, 1956).

American Society for Testing Materials, ASTM Committee D-13, 1916 Race Street, Philadelphia 3, Pa., 1956. 766 p. $5.75.

The January 1956 edition contains the definitions and terms, methods of testing, and specifications for textile and related materials prepared by the ASTM Committee D-13 on textile materials. Appendices include tables on basic properties of textile fibers, tables for yarn number conversion and relative humidity tables.

INDUSTRIAL ENGINEERING F

How automatic process control can help to achieve steam and fuel economy.

L. Walter. *Textile Bull. 82:* 93-95 (March, 1956).

This brief non-technical survey of recommended methods for reduction of heat consumption has been written for the management of textile finishing plants.

Computers, mathematics, statistics, and automation.

A. Rose, R. C. Johnson, R. L. Heiny, and T. J. Williams. *Ind. Eng. Chem. 48:* 622-632 (March, 1956).

A thorough and comprehensive review of where and how automation, automatic computers, statistical methods, operations research and quality control can be profitably used in various types of industrial operations. An extensive bibliography of important articles and books on automation, computers, statistical designs, statistical methods, mathematics, and quality control is included.

Mercury arc rectifiers.

Textile Mfr. 82: 127-129 (March, 1956).

The author deals with hand-started, single-phase electronic rectifiers, single-phase rectifiers with coil operated tilting bulb, mercury-arc rectifiers with dipping ignitor, polyphase rectifiers, rectifier cooling and control and protection of rectifiers.

MACHINERY AND MAINTENANCE F 1

Application of electrical equipment to tex-

tile machinery. Part 4. Motor controlgear.

F. W. Cox. *Texture 3:* 21-23 (March, 1956).

Electrical drives in the textile industry: modern developments in spinning and weaving.

J. G. Winterbottom. *Textile Wkly. 56:* 520, 522 (February 24, 1956); 576, 578, 580 (March 2, 1956).

Lecture on growth of modern individual drive for machines in textile mills.

Selecting and applying electrical measuring instruments in textile mill maintenance.

R. S. White (Universal Winding Co.). *Textile Bull. 82:* 98-101 (March, 1956).

Guide to the selection of adequate instrumentation for successful trouble shooting in textile operations.

Many advances made in new machinery.

E. J. McVey (Saco-Lowell Shops). *Southern Textile News 12:* 74, 79 (March 31, 1956).

Brief review of the accomplishments achieved in the field of machinery research and their influence on mill operations.

WASTE DISPOSAL F 2

An industrial waste guide to the wool processing industry.

American Association of Textile Chemists and Colorists. Stream Pollution Abatement Committee. Wash., U. S. Public Health Service, 1955. 14 p. Public Health Service Publication no. 438. Available from Superintendent of Documents, Washington 25, D. C. 15¢.

This guide summarizes the sources of pollution in the wool-processing industry, the polluting effects of woolen-mill wastes, and information on the methods of dealing with the waste problems of the industry. 58 references.

QUALITY CONTROL F 3

If your client needs quality control.

J. L. Morrissey (A. T. Kearney & Co.). *Consulting Engineer 7:* 63-67 (April, 1956).

Review of basic principles of statistical quality control, particularly charts for averages and ranges.

Statistical quality control in cotton spinning. (Statistische Qualitats Kontrolle in der Baumwoll Spinnerei).

W. Masing. Konradin-Verlag Robert Kohlhammer, Stuttgart, Germany, 1955. 149 p. 17.20 DM. In German.

The basic methods of statistical quality control in cotton spinning are covered, including the following: sampling, control charts, significance tests, analysis of variance, and the Enrick-technique of process-to-process variations analysis. A general bibliography refers to basic book sources in the German and English languages.

Technical control in wool processing.

G. E. Largy. *Can. Textile J. 73:* 66-67 (March 9, 1956).

The primary factors in setting up a quality control program are briefly discussed.

OTHER F 4

Statistical procedures in industrial engineering.

S. Barkin. *Time & Motion Study 4, No. 12:* 32-35, 38-39, 42-46 (1955). Through *BCIRA 36:* 110 (1956).

Statistical methods used in work study are critically discussed from the point of view of the trade union. The author is Director of Research, Textile Workers Union of America.

SCIENCES G

CHEMISTRY G 1

Cellulose studies. Part 21. The rate of degradation of cellulosic materials to the oligosaccharide stage in phosphoric acid solution.

R. A. Martin and E. Pacsu (Textile Research Institute and Frick Chemical Laboratory, Princeton Univ.). *Textile Research J. 26:* 192-204 (March, 1956).

The present study was undertaken to determine the rate of decrease in the number-average degree of polymerization (D.P.) of viscose, regenerated cellulose and native hydrocellulose in 85 per cent phosphoric acid during a major part of the hydrolytic process. By measuring the relative amounts of the degradation products and determining the number-average D.P.'s from reducing end-group estimations, it was possible to obtain a combined average D.P. for each sample taken at suitable intervals of time. The rate of hydrolysis of cellobiose in phosphoric acid was also determined to verify Freudenberg's findings that the 1,4 -glucosidic bond of cellobiose is hydrolyzed three times faster than the same type bonds in the cellulose molecule. Tables, graphs. 28 references.

Industrial and manufacturing chemistry. Part 1. Organic.

G. Martin and E. I. Cooke. Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y., 1955. 752 p. $17.50. Revised ed.

In this comprehensive treatise on the application of organic chemistry to the chemical industry, the following sections are of particular interest to the textile technologist: *The starch industry; The cellulose industry; Textile fiber, bleaching and waterproofing industries; The dyeing and color printing industry.*

Synthetic detergents and emulsifiers—up to date.

John W. McCutcheon, Inc. 475 Fifth Avenue, New York 17, New York. 1955. 64 p. $2.00.

Reprinted from *Soap and Chemical Specialties,* July, Aug., Sept., Oct., 1955.

MISCELLANY H

Report on cotton research.

International Cotton Advisory Committee, South Agriculture Building, Washington 25, D. C. 1955. 188 p. Free.

Organization, financing, and current trends of research in cotton and its utilization in 22 countries.

The application of chemical research to the wool textile industry.

B. D. Booth (Univ. of Leeds). *Textile J. Australia 29:* 1527-1529 (February 21, 1955).

Lecture on the work of wool research chemists, and past and possible future developments from their work. Chemical and enzyme depilation, scouring, carbonizing, setting, and shrinkproofing are discussed.

Research sharply rises in textiles.

S. Oglesby, Jr. (Southern Research Institute). *Southern Textile News 12:* 10, 72 (March 31, 1956).

Recent developments in textile chemistry and textile processing are discussed.

Superior goods at lower costs is the key: this may be accomplished by cooperative research.

J. Compton (Institute of Textile Technology). *Southern Textile News 12:* 62 (March 31, 1956).

Active research on: (1) cotton as a raw material, (2) processing research, and (3) instrumentation at I.T.T. is briefly described.

New England textiles and the New England economy: report to the Conference of New England Governors.

S. E. Harris, Cambridge, Mass., New England Governors' Textile Committee, 1956. 197 p. Free.

An attempt is made to show the trends in the industry and the economy; the relative rates of growth; the competition of non-textile fabrics, and the changing consumption pattern of the nation in relation to the problems of the textile industry.

India's allied textile industries.

B. B. Joshi. Technical and Commercial Publications, 81 Alkapuri, Baroda, India, 1954. 187 p. $1.40.

This book covers the technical aspects of the manufacture of textile accessories and textile machinery in India.

Textile terms and definitions. 2 ed.

The Textile Institute, 10 Blackfriars Street, Manchester 3, England, 1955. 70 p.

The definitions in this brochure fall into two categories: those that are tentative and those which have been formally adopted by the Textile Institute. The definitions have been written for use by the student, the qualified technician or technologist, and the industrialist. A proposed scheme for classifying textile fibers is included at the end of the booklet.

Tentative and amended textile terms and definitions.

J. Textile Inst. 47: P134-P154 (February, 1956).

Dictionary: Italian-English, English-Italian—of technical and commercial terms used in the cotton industry.

Istituto Cotoniero Italiano, Rome, Italy, 1955. 137 p.

Horner's dictionary of mechanical engineering terms. Part 1. Modern terms. Part 2. General and traditional terms.

S. Abbey. Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y., 1955. 417 p. $6.50. Revised ed.

Textiles and the inventive spirit.

J. R. Whinfield. *J. Textile Inst. 47:* P5-P11 (January, 1956).

Emsley lecture.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

Col. 211

FIBERS A

NATURAL FIBERS A 1

Process for degumming ramie fiber.

F. Fabian (to Fiber Processors, Inc.). USP 2 738 271, March 13, 1956.

Device for decorticating bast fiber material.

H. J. Selling and C. Bok (to Novivlas N. V.). USP 2 738 552, March 20, 1956.

Treatment of reduced keratinous materials with α-dihalodicarboxylic acid.

H. A. Lubs (to E. I. du Pont de Nemours and Co.). USP 2 739 033, March 20, 1956.

Apparatus for packing loose bulk material capable of compression through a large compression ratio into pliable bale covers.

M. W. Davidson (to Sanderson and Murray Ltd). USP 2 739 749, March 27, 1956.

MAN-MADE FIBERS A 2

Polyamide fibers containing chromium salts as light stabilizers.

R. Gabler and P. Kümmel (to Inventa AG). USP 2 739 139, March 20, 1956.

YARN PRODUCTION B

Process for the conversion of a bundle of continuous filaments into a continuous product made of staple fibers.

W. Pool and A. McGill (to Celanese Corp.). USP 2 737 687, March 13, 1956.

Tow opening device.

W. T. Jackson (to Eastman Kodak Co.). USP 2 737 688, March 13, 1956.

Separator for running yarn and liquid.

J. W. Pedlow (to American Viscose Corp.). USP 2 739 712, March 27, 1956.

Col. 212

OPENING, PICKING, FIBER PREPARATION B 1

Apparatus and method for distributing fibrous and like materials upon a blending surface.

J. H. Senior and J. W. Powischill (to Proctor and Schwartz, Inc.). USP 2 737 691, March 13, 1956.

Delinter.

W. G. Davis, Jr. (to Anderson, Clayton and Co.). USP 2 738 553, March 20, 1956.

Air scrabbler system for the air deposition of fibers.

B. E. Anderson (to A. B. Dick Co.). USP 2 738 556, March 20, 1956.

Apparatus for the air deposition of fibers in the manufacture of fibrous structures.

B. E. Anderson and J. C. Leske (to A. B. Dick Co.). USP 2 738 557, March 20, 1956.

Stick remover for cotton cleaning machinery.

O. Mitchell and E. G. Walton, Jr. (to John E. Mitchell Co.). USP 2 739 353, March 27, 1956.

CARDING AND COMBING B 2

Card flat clothing.

Anciens Etablissements P. Destombes & Cie. BP 733 363, July 13, 1955. Through *BCIRA 36:* 89 (1956).

Carding engine.

W. A. Hunter (to T.M.M. (Research) Ltd). USP 2 737 689, March 13, 1956.

DRAWING AND ROVING B 3

Web protecting air shield attachment for drawing frames.

E. H. Rogers. USP 2 737 692, March 13, 1956.

Cleaning device for revolving clearer rolls.

F. H. Martin (to Springs Cotton Mills). USP 2 739 326, March 27, 1956.

Evener for drawing rolls for attenuating a plurality of strands of roving, sliver and the like.

J. R. Whitehurst (to Ideal Industries, Inc.). USP 2 738 554, 555, March 20, 1956.

Top weighting roller for drawing mechanism of spinning machines.

E. F. Schmid and J. Raible (to SKF Kugellagerfabriken Gesellschaft). USP 2 740 164, April 3, 1956.

SPINNING, WINDING, TWISTING B 4

Bobbin feeding mechanism for spooling machines.

J. D. W. Taylor (to William Ayrton & Co. Ltd). BP 733 439, July 13, 1955. Through *BCIRA 36:* 91 (1956).

Apparatus for stripping waste yarn from bobbins, etc.

W. Stutz and H. Stutz (to Stutz et Cie.). BP 733 464, July 13, 1955. Through *BCIRA 36:* 91 (1956).

Braking of double-twist throwing spindles.

Soc. d'Etudes et de Recherches de Material Textiles. BP 733 467, July 13, 1955. Through *BCIRA 36:* 90 (1956).

Drafting apparatus.

J. Noguera (to Casablancas High Draft Co. Ltd). USP 2 737 690, March 13, 1956.

A machine for making elastic yarn of the type formed by winding a textile cover on a rubber core.

R. J. Clarkson (to United States Rubber Co.). USP 2 737 773, March 13, 1956.

Traverse assembly for yarn package winding machines.

R. H. Breen (to Specialties Development Corp.). USP 2 738 137, March 13, 1956.

A device for tensioning a lengthwise moving thread.

N. E. Klein (to Deering Milliken Research Corp.). USP 2 738 141, March 13, 1956.

A yarn tension device.

R. H. Roughsedge (to Celanese Corp.). USP 2 738 937, March 20, 1956.

Twister head top.

W. E. Bierlin. USP 2 740 251, April 3, 1956.

Winding machine.

J. V. Keith (to Universal Winding Co.). USP 2 740 589, 590, April 3, 1956.

Parallel strand control for winders and the like.

E. L. Woods (to Valdese Manufacturing Co., Inc.). USP 2 740 591, April 3, 1956.

Guide for winding a strand on a spool, bobbin and the like.

D. F. Stevens. USP 2 740 594, April 3, 1956.

YARNS B 5

Shrinkable paper wrappers for filamentary packages.

O. A. Battista and G. G. Whytlaw (to American Viscose Corp.). USP 2 738 060, March 13, 1956.

Apparatus for wrapping a thin plastic strip spirally around a central thread.

F. Slavek. USP 2 738 641, March 20, 1956.

FABRIC PRODUCTION C

WARPING, SLASHING, YARN PREPARATION C 1

Thread-advancing reel.

D. Z. Goldenberg (to Industrial Rayon Corp.). USP 2 738 052, March 13, 1956.

Versatile yarn package holder.

C. Williams and W. H. Frazier (to West Point Manufacturing Co.). USP 2 738 139, March 13, 1956.

Textile package.

F. Honig. USP 2 738 144, March 13, 1956.

Package of flexible material.

W. P. Taylor, Jr. USP 2 738 145, March 13, 1956.

Warp beam package.

Q. Hargenrater (to American Viscose Corp.). USP 2 738 176, March 13, 1956.

Antistatic and lubricating agent for treating rayon yarns, filaments and fibers.

J. M. Hood (to American Cyanamid Co.). USP 2 738 324, March 13, 1956.

Textile warping machine.

A. Robertson and A. W. H. Porter (to F. N. F. Ltd). USP 2 738 565, March 20, 1956.

WEAVING C 2

Actuation means for loom shuttle.

A. Longoria. BP 733 677, July 13, 1955. Through *BCIRA 36:* 92 (1956).

Mechanical loom.

E. Pfarrwaller (to Sulzer Freres Soc. Anon.). USP 2 737 981, March 13, 1956.

Sheet metal heddles.

W. Muller (to Grob and Co. AG). USP 2 737 982, March 13, 1956.

High capacity mechanical looms.

G. Varkonyi, V. Bokor and G. Varkonyi (to Licencia Talalmanyokat Ertekesito Vallalat). USP 2 738 810, March 20, 1956.

Heddle bar support.

F. M. Suchke (to Pioneer Heddle and Reed Co., Inc.). USP 2 739 617, 618, March 27, 1956.

Loom with continuous stationary weft supply.

C. S. Aspden (England). USP 2 739 619, March 27, 1956.

Method of and mechanism for operating the picking stick of mechanical looms.

P. C. Selles (Spain). USP 2 739 620, March 27, 1956.

Picker stick returning spring.

H. Roy and D. Lecourt. USP 2 739 621, March 27, 1956.

Parallel-motion-supported picker stick check for looms.

J. C. Crocker. USP 2 739 622, March 27, 1956.

Backing fabrics and method of weaving them.

H. L. Shuttleworth (to Mohawk Carpet Mills, Inc.). USP 2 740 430, April 3, 1956.

Pickers for underpick looms.

H. Hargreaves (England). USP 2 740 431, April 3, 1956.

Stop motion for shifting shuttle box looms.

A. E. Buchanan, III and B. C. Boger, Jr. USP 2 740 432, April 3, 1956.

Stop-motion for narrow fabric looms.

L. Ballard (to Burlington Industries, Inc.). USP 2 740 433, April 3, 1956.

Technique for a woven blanket of double woven construction.

G. W. Lemieux (to Beacon Manufacturing Co.). USP 2 740 434, April 3, 1956.

KNITTING C 3

The process of making a fabric backed fur-like material by a knitting operation using hooked needles.

A. W. Schmidt and J. P. Malik (to G. W. Borg Corp.). USP 2 737 702, March 13, 1956).

Independent-needle circular knitting machine.

C. F. Manger (to Bentley Engineering Co. Ltd). USP 2 737 793, March 13, 1956.

Yarn carrier for full-fashioned knitting machines.

G. Bitzer (to Textile Machine Works). USP 2 737 794, March 13, 1956.

Electric switch for stop-motion devices on knitting machines.

E. V. Lynbrook (to Stop-Motion Devices Corp.). USP 2 738 387, March 13, 1956.

Method of producing puckered knit fabric.

T. P. Scott, Jr. (to William Carter Co.). USP 2 738 566, March 20, 1956.

A method of knitting on a circular, independent needle, knitting machine of the dial and cylinder type.

P. L. St. Pierre (to Hemphill Co.). USP 2 738 661, March 20, 1956.

A knitted hose with a longitudinally extending instep portion of transverse rib knit to cause the heel, sole and toe portion to automatically fit the foot.

L. Stern. USP 2 739 467, March 27, 1956.

Adjustable needle-bed mount for circular knitting machines.

B. J. E. Lebocey (France). USP 2 740 274, April 3, 1956.

A method of producing inlaid knittings.

H. G. Lacks. USP 2 740 275, April 3, 1956.

Automatic transfer knitting machine.

C. W. Minton (to May Hosiery Mills). USP 2 740 276, April 3, 1956.

Circular knitting machine and method.

V. Lombardi. USP 2 740 277, April 3, 1956.

Knitted hosiery and method of closing the toe on a circular knitting machine.

J. L. Getaz. USP 2 740 279, April 3, 1956.

Composition of matter suitable for lubricating and softening silk and artificial fibers and yarns of cellulosic and non-cellulosic character preparatory to knitting.

A. Maeder and O. Albrecht (to Ciba Ltd). USP 2 740 759, April 3, 1956.

FABRICS C 4

Stripe matching machine.

D. V. Thompson (to Tubular Textile Machine Corp.). USP 2 737 700, March 13, 1956.

Method of making elastic fabrics.

B. D. Hubbard and P. Dereniuk (to United States Rubber Co.). USP 2 737 701, March 13, 1956.

Pile fabric.

L. A. Runton and E. H. Shattuck (to Alexander Smith, Inc.). USP 2 738 296, March 13, 1956.

Nonwoven decorative picot ribbons.

D. J. David and R. H. Hanson (to Minnesota Mining and Manufacturing Co.). USP 2 738 298, March 13, 1956.

Apparatus for making bed sheets and the like.

J. T. MacIsaac, Jr. and R. L. Self (to Fieldcrest Mills, Inc.). USP 2 738 746, March 20. 1956.

Process of coating a resin impregnated support sheet with a melamine-formaldehyde composition to produce a surface laminate.

H. P. Wohnsiedler and W. M. Thomas (to American Cyanamid Co.). USP 2 739 081, March 20, 1956.

Method of producing creped vinyl fabric.

P. J. Corbiere (to Societe Rhodiaceta). USP 2 740 183, April 3, 1956.

Electrically charged fabric material.

A. G. Thomas. USP 2 740 184, April 3, 1956.

A flexible, foraminous abrasive product comprising a base of an open mesh, woven fabric, having a coating thereon of a flexible presizing material.

A. L. Ball, O. S. Buckner and P. C. Tucker (to Bay State Abrasive Products Co.). USP 2 740 239, April 3, 1956.

Circular or tubular braided fabric.

A. Crossley and H. M. Crossley (England). USP 2 740 316, April 3, 1956.

An adhesive bandage comprising a backing thickness of porous fabric and a carrier thickness of an open-mesh fabric impregnated with adhesive.

G. B. E. Schueler (to T. J. Smith and Nephew Ltd). USP 2 740 403, April 3, 1956.

Method and apparatus for forming a cloth selvage.

R. D. Wood, Jr., G. Thomson and C. F. Whitaker (to Millville Manufacturing Co.). USP 2 740 457, April 3, 1956.

Process of manufacturing a flexible, open mesh, abrasive coated fabric having substantially unblocked mesh.

A. L. Ball (to Bay State Abrasive Products Co.). USP 2 740 725, April 3, 1956.

A carpet underlay comprising a coarse-mesh fabric and a sponge rubber facing on one side of the fabric.

D. R. Harwin, A. Stern and V. H. Bodle (to National Sponge Cushion Co., Inc.). USP 2 740 739, April 3, 1956.

FINISHING AND CHEMICAL PROCESSING D

Apparatus for tension control of tubular textile fabrics.

S. Cohn and J. G. Walter (to Samcoe Holding Corp.). USP 2 739 762, March 27, 1956.

Method of treating an endless, woven and fulled blanket used for the compressive shrinkage of other fabrics to eliminate marking and creasing of the fabrics shrunk by the blanket.

C. M. Littleton, Jr. and C. C. Gordon (to Albany Felt Co.). USP 2 740 727, April 3, 1956.

CHEMICAL PROCESSES D 1

Plant for finishing knitted or other textile articles.

A. Clark (to N. Corah & Sons Ltd). BP 733 377, July 13, 1955. Through *BCIRA 36:* 98 (1956).

Process for fixing dyes, mothproofing agents, water-repellent finishes, etc., on fibrous materials.

Farbwerke Hoechst AG. BP 733 471, July 13, 1955. Through *BCIRA 36:* 98 (1956).

Treatment of non-woven cellulosic fabrics with weak acid aminotriazine resin colloids.

J. K. Dixon (to American Cyanamid Co.). USP 2 708 644, May 17, 1955.

Impregnating cellulose with a solution of a polymerizable monomeric quaternary ammonium salt containing a vinylidene group.

J. E. Kirby (to E. I. du Pont de Nemours and Co., Inc.). USP 2 732 317, January 24, 1956.

Process for treating organic textile materials with silicones in order to improve their water repellency, dimensional stability, flame resistance and crease resistance.

J. R. Janes (to Deering Milliken Research Corp.). USP 2 738 290, March 13, 1956.

Cellulosic fabric stabilized with non-chlorine retentive resin.

J. H. Wright and J. T. Inamorato (to Cluett, Peabody and Co., Inc.). USP 2 738 292, March 13, 1956.

A method of controlling the rate of bleaching by the iron-catalyzed decomposition of sodium chlorite.

W. K. Wilson. USP 2 739 032, March 20, 1956.

Permonosulfuric acid and sulfite treatment of wool to reduce the tendency to shrink when washed.

E. T. Fell (to Stevensons (Dyers) Ltd). USP 2 739 034, March 20, 1956.

A process of making vulcanized rubber articles reinforced with cords made from cellulosic fibers impregnated with an aqueous solution of an alkali salt of a rosin acid.

C. F. Engstrom and I. A. de Sostoa (to United States Rubber Co.). USP 2 739 091, March 20, 1956.

Apparatus for the continuous wet treatment of cloth.

H. R. Wilcox (to Riggs and Lombard, Inc.). USP 2 739 468, March 27, 1956.

Apparatus for the liquid treatment of fibers.

J. E. Cary, R. E. Shafer and V. Cary. USP 2 739 470, March 27, 1956.

Method of impregnating cellulosic textile fabric with urea-formaldehyde resin.

J. T. Marsh (to Tootal Broadhurst Lee Co. Ltd). USP 2 739 908, March 27, 1956.

Method of bonding textile yarn to rubber.

J. W. Illingworth (to Dunlop Tire and Rubber Corp.). USP 2 739 918, March 27, 1956.

A process for coating fabrics by bonding a film of coating material to a sheet material.

W. W. Artzt (to Dualoy, Inc.). USP 2 739 919, March 27, 1956.

Peroxide bleaching of cellulosic fibers with polyphosphates and alkali salt of EDTAA.

B. K. Easton and W. H. Kibbel, Jr. (to Food Machinery and Chemical Corp.). USP 2 740 689, April 3, 1956.

DYEING AND PRINTING D 2

Embossing and printing machine for finishing of textile fabrics.

Heberlein and Co. AG. BP 732 417, June 22, 1955. Through *BCIRA 36:* 33 (1956).

Driers operating in conjunction with printing machines.

J. Monforts and C. Monforts (to A. Monforts AG). BP 732 558, June 29, 1955. Through *BCIRA 36:* 67 (1956).

Process for preparing photo-engraved continuous cylindrical screens for printing.

Tintoria Comensa S.p.a. (Italy). BP 732 614, June 29, 1955. Through *BCIRA 36:* 66 (1956).

Machine for printing fabrics through stencil frames.

J. Bley (France). BP 732 742, June 29, 1955. Through *BCIRA 36:* 66 (1956).

Dyeing and setting ladies' stockings.

K. Frowein (Germany). BP 732 993, July 6, 1955. Through *BCIRA 36:* 65 (1956).

Continuous dyeing with vat or sulfur dyes in a reducing atmosphere of hydrogen so that lower temperatures may be employed.

E. Haslam. BP 733 065, July 6, 1955. Through *BCIRA 36:* 65 (1956).

Methods of coloring fabrics for camouflage purposes.

Stabilimenti di Ponte Lambro S.p.a. (Italy). BP 733 094, July, 1955. Through *BCIRA 36:* 65 (1956).

The invention overcomes the possibility of detecting camouflage by infra-red photography. Colors are chosen that have the same absorption for infra-red and give a uniform gray response.

Method of making striped dyed textile fabric.

H. R. Mathewson, W. M. Housch and W. F. Covin (to Springs Cotton Mills, Inc.). USP 2 733 974, February 7, 1956.

Process of coating and dyeing textile fibers.

T. C. Whitner. USP 2 733 975, February 7, 1956.

Dyed cellulose acetate textile material having incorporated therein, as an acid fading inhibitor, di- (diethylaminoethyl) phthalate.

W. J. Myles (to Celanese Corp.). USP 2 736 631, February 28, 1956.

Apparatus for striping textile fabrics.

H. R. Mathewson, W. M. Housch and W. F. Covin (to Springs Cotton Mills). USP 2 737 042, March 6, 1956.

Process of manufacturing viscose rayon yarn spun-dyed with a vat dye.

A. G. Lutgerhorst (to American Enka Corp.). USP 2 738 252, March 13, 1956.

Method of dyeing peroxide-bleached wool.

E. S. Shanley and H. O. Kaufmann (to Food Machinery and Chemical Corp.). USP 2 739 868, March 27, 1956.

Method of dyeing structures comprising acrylonitrile polymers.

G. E. Ham (to Chemstrand Corp.). USP 2 740 687, April 3, 1956.

A fixing composition for use in the after-treatment of dyed materials including dyed union materials.

E. S. Chapin and J. R. Markgren (to W. C. Durfee Co., Inc.). USP 2 740 688, April 3, 1956.

Acid wool dyestuffs of the anthraquinone series.

J. Singer and O. Bayer (to Farbenfabriken Bayer AG). USP 2 740 796, April 3, 1956.

MECHANICAL PROCESSES D 3

Process for the manufacture of permanent local mechanical effects on crepe fabrics.

Heberlein and Co. AG. BP 732 210, June 22, 1955. Through *BCIRA 36:* 33 (1956).

Pre-shrinking of textile fabric by centrifugal force.

L. Bibaly (to Trubenised (Gt. Britain) Ltd). BP 733 384, July 13, 1955. Through *BCIRA 46:* 98 (1956).

Mechanical method of fabric finishing to reduce shrinkage and improve the feel and hand of cloth.

C. G. Hatay. USP 2 733 498, February 7, 1956.

Roll-driving mechanism for a napping machine and torque control devices therefor.

T. A. Dourdeville (to David Gessner Co.). USP 2 739 366, March 27, 1956.

Cloth treating calender.

W. P. Rose. USP 2 739 397, March 27, 1956.

Machines for folding sheets and like articles.

S. Woodward and W. F. R. Morgan (to Baker Perkins Ltd). USP 2 740 627, April 3, 1956.

DRYING D 4

A process for drying textile materials by passing heated air under super-atmospheric pressure through the materials.

A. F. B. Thies (to Firma B. Thies). USP 2 739 392, March 27, 1956.

Process and apparatus for drying sheet material.

A. A. Fowle (to Ultrasonic Corp.). USP 2 740 202, April 3, 1956.

TESTING AND MEASUREMENT E

YARNS E 2

Apparatus for collecting and preparing yarn samples for dye testing and for measuring the uniformity of dyeing.

S. L. Dart and J. P. Hollihan, Jr. (to American Viscose Corp.). USP 2 737 806, March 13, 1956.

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